

Desiccants used in pharmaceutical packaging

Definition

Desiccants of pharmaceutical packaging are used to maintain the quality, strength and purity of medical drugs for the long time. It is very important for pharmaceutical industry to preserve their drugs and extend their shelf life to make the trustworthy relationship with the patients who rely on their products.

Why desiccant packaging is important for medicine and food?

Due to the environmental surroundings, food products, pharmaceuticals and nutraceutical products can change and can be in deprived condition with the passage of time. Such degradation occurs based on the nature of product and external environment. You must be aware of the fact that moisture in the environment can bring a negative impact on the stability of these products. In order to protect the pharmaceutical from any kind of damage due to moisture or humidity, you need to keep them preservative using the effective dehydrating solution. Desiccants of pharmaceutical packaging are used to maintain the quality, strength and purity of medical drugs for the long time.



Packaging for effervescent tablets

Such desiccants help the drugs manufacturers to keep their words with the perfect packaging requirements. The different types of desiccants are used to protect the drugs by maintaining the dry packaging environment. A desiccant store of plastic cap is designed for static adsorption of moisture in a closed environment. Such desiccants include silica gel, molecular sieves, activated carbon, clay etc. These pharmaceutical desiccants are convenient and economical to make a small package to be placed inside the product package.



Moisture proof bottle

The main purpose of desiccant packaging is to achieve the goals of adsorbing the moisture in a closed environment. It makes the task of protecting the drugs easier and prolongs their life as per their mentioned expiration date. You need to choose the right solution without compromising the quality and integrity of the products to resolve moisture related issues.

Application of desiccants packaging

The principal desiccants used in pharmaceutical applications are silica gel and molecular sieve. Silica gel is available in two main types: a white, non-indicating version and one that changes colour when moisture is adsorbed. The latter is obviously useful to indicate when the desiccant is used up.

- Grain size of the silica gel
- Material of the pouch
- Size of the pouch
- Profile height
- Moisture content
- Absorption capacity
- Form of the processing unit
- Punch holes
- Adhesive spots

How do desiccant packaging work & needed?

The Desiccant products work on the principle of moisture adsorption from the air. The term adsorption pertains to the weak intermolecular acting forces. These drying agents work on the mechanism of multiple layer adsorption attracting thin layers of moisture molecules from the air to the desiccant surfaces.

A unit (approximately one ounce) is the amount of desiccant that will absorb at least three grams of water vapor at 20% relative humidity and at least six grams of water vapor at 40% relative humidity at 77 degrees F (25 degrees C).

Benefit of desiccant packaging

- Individual design of bags made from material permeable to water vapour (non-woven fabric, paper, composite material).
- Custom-made production of intermixtures of desiccants by our lab team

- Imprint and labelling of products and outer packaging.

List of common desiccant

- Silica gel.
- Molecular silver.
- Indicating silica gels.
- Calcium oxide.
- Desiccant clay.
- Montmorillonite clay.

Reason for desiccant use

- Protect from corrosion, mold mildew grow
- Prevent from tablet stickiness.
- Prevent from hydrolysis of drug
- To prevent new drug and effervescent tablet during packaging.
- Lethal potential to damage metal, drug, woods, plastic, glass, food, cloth, paper, leather the effective of Moisture and Oxygen are simply devastating.
- On the product life, presentability, functionality and performance, on profit and finally on the reputation of manufacturer or exporter.

Quality Parameter of Desiccant Packaging

- Should have very high adsorption capacity.
- Should have low residual moisture (LOD)
- The desiccant material should have neutral pH (6.5-7.5), inert and non toxic in nature.
- Should be packed in non dusting, non tearable, non lintable packing material.
- The packet material should not have wetting effect on surface upon saturation.
- Should be conforming to international standards.
- Should be active when using.
- The packet material should be permeable to moisture.

Do and Don'ts Desiccant

DO

- Always use desiccant when you are ready to pack your goods and seal immediately.
- Place the desiccant at different location inside the package and near the possible source of air permeation.
- Store in the original container away from darkness
- Lock at the HIC placed inside the desiccant before using.

Don'ts

- Expose the desiccant unnecessarily
- Removed the HIC card from the original container.
- Use over exposed desiccant pouches.
- Punch holes in the desiccant packets.



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